

TENSIONED MONOLAYERS OR PNEUMATIC MULTILAYERS USING CUSHIONS.

IS IT:

☒ *Product*

☐ *Technology*

☐ *Equipment*

APPLICABLE FOR:

☒ *Restoration*

☒ *Rehabilitation*

☐ *New Construction*

APPLICABLE ON:

☐ *1. Foundations and underground structures*

☐ *2. Vertical structures*

☐ *3. Horizontal structures and vertical connections*

☒ *4. Roof and terraces*

☒ *5. Façade and building envelope*

☐ *6. Finishes and completion elements*

☐ *7. Integrated services*

☐ *8. General strategies for building recovery*

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DESCRIPTION

For covering patios of existing buildings and even historic buildings that have lost their roofs.

WHY TO USE

1. For its lightness, which means lower structural cost
2. For its high level of transparency
3. For its luminosity and solar control, preventing the entry of UV-C rays.
4. Material resistant to the weather inclemencies and various impacts.
5. Long durability, impermeability and excellent fire resistance (low flammability).
6. Minimal maintenance, the sheets are self-cleaning with rainwater due to their high anti-adherence.
7. The material used is 100% recyclable.
8. In double sheet or "pillow" configuration, it is thermally insulating.

HOW TO USE AND APPLY

EFTE is one of the most innovative materials in architecture today.

It is a resistant, transparent and lightweight fluoropolymer, which allows for a lightweight fastening system.

Its application is interesting to cover historic public buildings that have lost their roof, but that have a use that allows the covering with a transparent material.

1. As a replacement slab, it will be necessary to verify the good state of conservation of the existing structural elements that are preserved.
2. Calculation of the deformation, resistance and fire performance required of the new slab.
3. Calculation of the structure for fastening the EFTE sheets.
4. Dismantling of the existing slab.

5. Laying of the support structure and the EFTE sheets.

TECHNICAL CHARACTERISTICS

EFTE= ethylene-tetrafluoroethylene copolymer

Weight: 3 kg/m² (about 100 times less than glass)

High stability to temperature changes: up to 170°C

Elongation at break = 250-350%.

Rockwell hardness= R50

Tensile modulus= 0,8 GPa

Tensile Strength= 28-48 MPa

Izod Impact Strength= >1000 Jm-1

Specific Heat= 1900-2000 JK-1kg-1

Thermal Conductivity at 23°C= 0,24 Wm-1K-1

RECOMMENDATIONS AND OTHER INFORMATION

The best known trade names for EFTE are: Dupont's Tefzel, Asahi Glass Company's Fluon and Daikin's ETFE Neoflon.

EXAMPLES

Igartza Palace, Gipúzcoa, Spain

Church of Corbera d'Ebre, Tarragona, Spain

Roof in Ciudad Rodrigo courtyard, Salamanca, Spain

As positive points we have the lightness, the luminosity and the use of a recycled material

As negative points, we have the difficulty of controlling sunlight and, therefore, the moments of overheating.



REFERENCES / SOURCES AND LITERATURE

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WEBSITE OF THE COMPANY

<https://www.batspain.com>

IMAGES AND CAPTIONS



Fig.1-2: Palacio de Igartza. Besain, Gipúzcoa, 2009. ©BATSPAIN.COM



Fig.3-4: Abadia Sainte-Croix, Les Sables d'Olonne, 2013. © <https://www.iasoglobal.com/es/proyecto/abadia-sainte-croix>

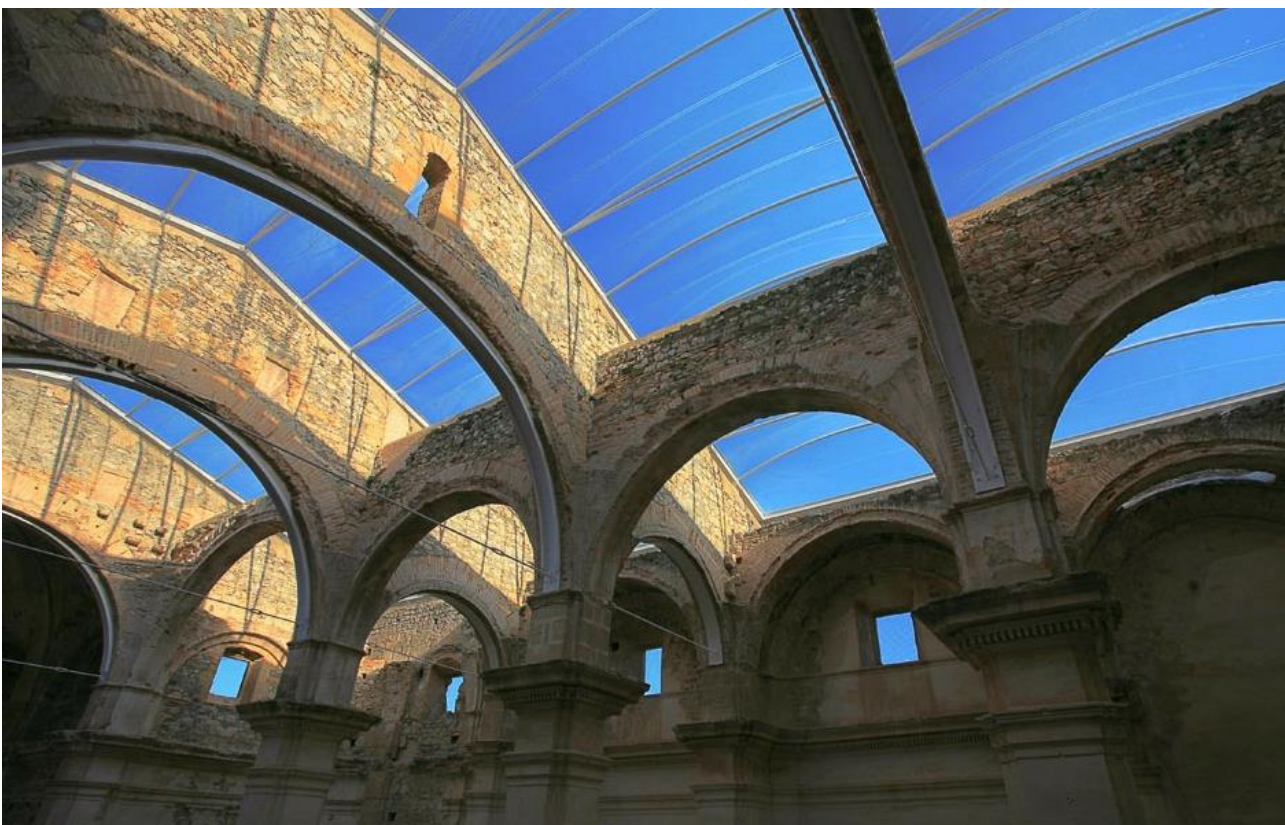


Fig.5-6: Church of St. Pere, Corbera d'Ebre, 2013. © https://www.iasoglobal.com/docs/IASO_ETFE_2014_ES.pdf